new

CHERRY

electronic data entry **KEYBOARDS**

Cherry's efficient new link between operator and computer.

A NEW KIND OF KEY...

Gold Crosspoint Contacts For Enhanced Reliability

KEY MODULE An exclusive CHERRY design, the Gold Crosspoint Contact Switch (two Gold prisms at right angles to each other) has provided highly reliable keyboard switching for several years in thousands of the most sophisticated electronic desk top calculators.

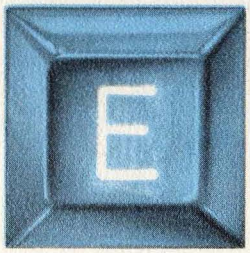
This proven design concept (crossed knife edge contact configuration) provides high force per unit of contact area and virtually eliminates contact closure interference by contaminates.

Precious metal contact material (W/E Alloy #1) consists of 69% Gold, 25% Silver and 6% Platinum. Contact interfaces are inert to chemical action with resultant low contact resistance (typically 25 milliohms).

Lower profile key module (¾") reduces overall keyboard height to 1½" from key top to printed circuit board compared with 2" overall on standard reed switch keyboards.

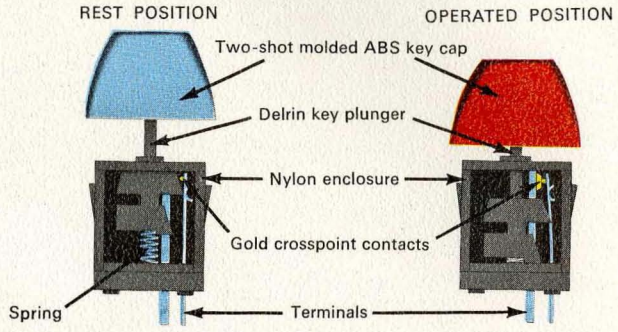
KEY BUTTON Many standard and custom characters in broad selection of popular ABS colors.

Contoured, truncated key button is two-shot molded for permanence. Keys are spaced ¾-inch center-to-center, with regular typewriter spacing between rows for maximum operator efficiency. Key rows are offset ⅜"—3⁄16"—⅜". Both stepped and sloped key arrangements are available.



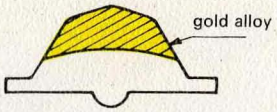
CHERRY LOW PROFILE KEY MODULE WITH GOLD "CROSSPOINT" CONTACTS

ACTUAL SIZE



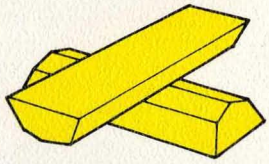
Cherry Gold "Crosspoint" Contact Innovation

Cross Section of Contact



W/E #1 69% Gold, 25% Silver, 6% Platinum

Crosspoint Configuration



A proven design concept—the new gold "crosspoint" contact innovation provides positive switching of low energy solid state circuits.

Contacts are normally held apart for greatest shock resistance. No microphonics or bounce during turn-off or at rest.

KEY MODULE SPECIFICATIONS

MECHANICAL

Operating Force: . . . . . 2½ ounce ± ½ ounce
Pretravel: . . . . . 3/32" ± 1/32"
Total Travel: . . . . . 3/16" Maximum
External Terminal: . . . . . Brass, Silver Plated
Temperature:
Operating . . . . . 0° C / 60° C
Storage . . . . . —35° C / 65° C
Key Module Case Material: . . . . Nylon
Key Button Material Color:
Exterior . . . . . Gray
Interior Legend . . . . . White
Life: . . . . . In excess of 10 million operations

ELECTRICAL

GOLD CROSSPOINT KEY MODULE
69% Gold, 25% Silver, 6% Platinum

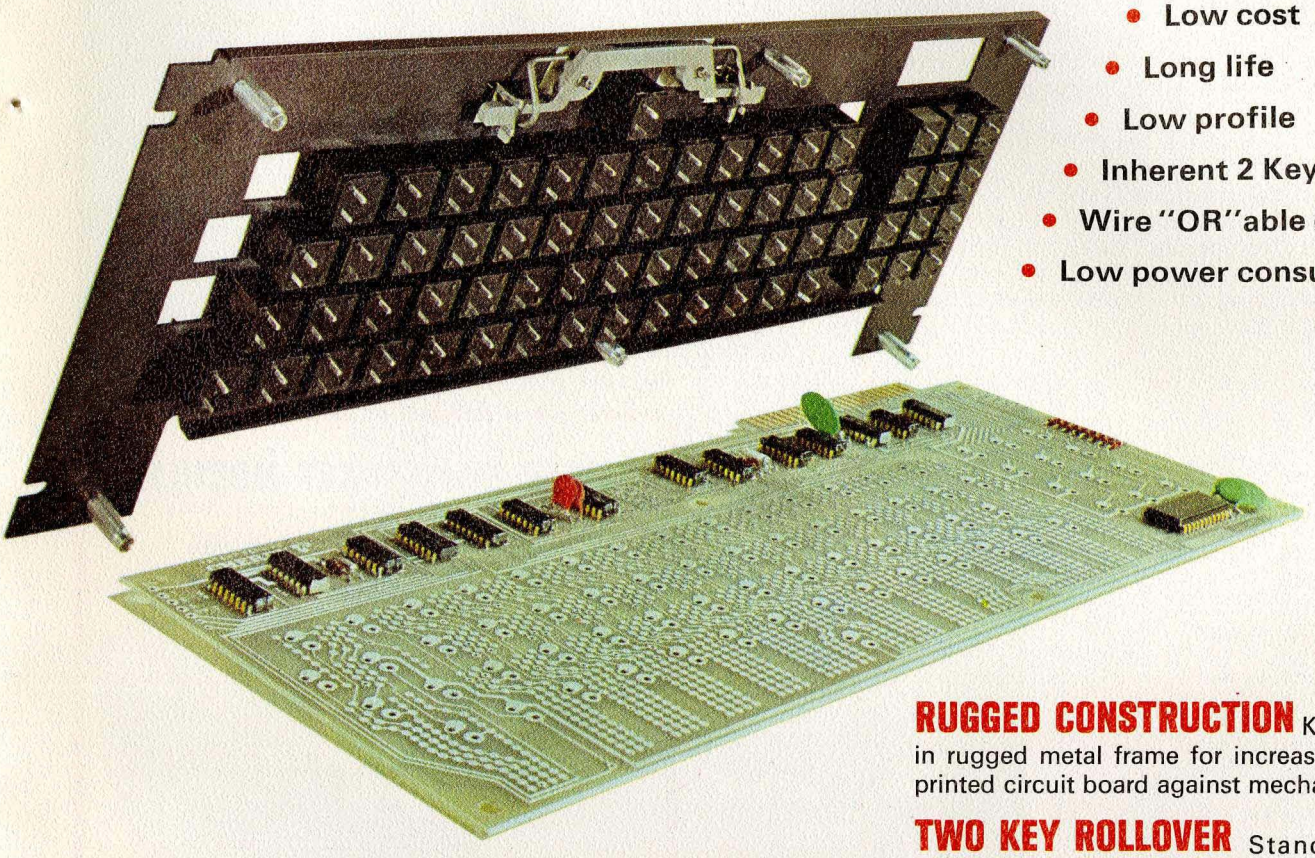
Contact Rating (Form A contacts)
DC Resistive . . . . . 3W max.
AC Resistive . . . . 3VA max.
Current . . . . . 0.125 amp. max. switching
0.5 amp. max. carry
Voltage . . . . . 28V max.
Bounce . . . . . 2 millisec. max. (typically 300 microseconds)
Initial Contact Resistance . . 200 milliohms max. (typically 25 milliohms)

REED KEY MODULE
Hermetically Sealed Form A

Contact Rating (Form A contacts)
DC Resistive . . . . . 7W max.
AC Resistive . . . 12VA max.
Current . . . . 0.25 amp. max.
Voltage . . . . . 28V max.
Bounce . . . . . 1 millisec. max.
Initial Contact Resistance . . 250 milliohms max.

A NEW KIND OF KEYBOARD...

New CHERRY Electronic Data Entry Keyboards Feature



- Low cost
- Long life
- Low profile
- Inherent 2 Key Rollover
- Wire "OR"able output
- Low power consumption

All electronic components are Standard MSI and available from multiple sources. Electronics are mounted on a single pc board.

KEYBOARD SPECIFICATIONS

ELECTRICAL

Power Requirement: +5.0 VDC ± 10% @ 200 milliamps typically
TTL compatible
Logic "0" + 2.4 volts minimum ≡ HIGH
Logic "1" + 0.45 volts maximum ≡ LOW
Outputs capable of sinking 16 milliamps
(ten 7400 type standard loads)

Input: Keyboard Disable (disable strobe & data bits forced High, Logic "0")
1.6 milliamps sink current required by source and +5.5 volt input maximum

Output: 7 bits with optional odd/even parity 8th bit
Function key outputs—open circuit with closure to ground when depressed
Strobe (Data Available) Output: Negative-going level ≥ 500 nanoseconds after data has settled

RUGGED CONSTRUCTION Keys are mounted in rugged metal frame for increased protection of printed circuit board against mechanical abuse.

TWO KEY ROLLOVER Standard keyboard units have 2 key rollover between all data keys, control, shift, and shift lock keys to simulate true typewriter sequencing.

KEYBOARD FLEXIBILITY Standard keyboard units include:

66 Key Tri Mode ASCII, negative logic (with provision to add 4 extra keys)
55 Key Quad Mode ASCII (ASR 33), positive logic
12 Key Numeric, straight output
16 Key Numeric, straight output

In addition, custom designs in mono, dual, tri and quad mode operation available on volume applications, with modest engineering, tooling, and artwork charges.

SPECIAL FEATURES AVAILABLE:

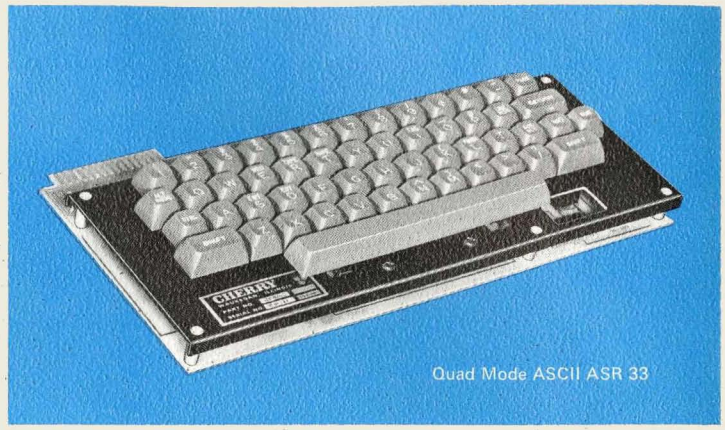
Positive logic resting "low" outputs or Negative logic resting "high" outputs. Open collector buffer outputs for hard wire "OR"ing available at no extra cost. Buffer output capable of driving terminated twisted pair or 90 ohm coaxial is optional. Repeating strobe is optional. Key locations may be geographically mixed. Special mono mode encoded keys may be added to configuration. Any of parity and/or data outputs optional may be later changed for modest revision charges.

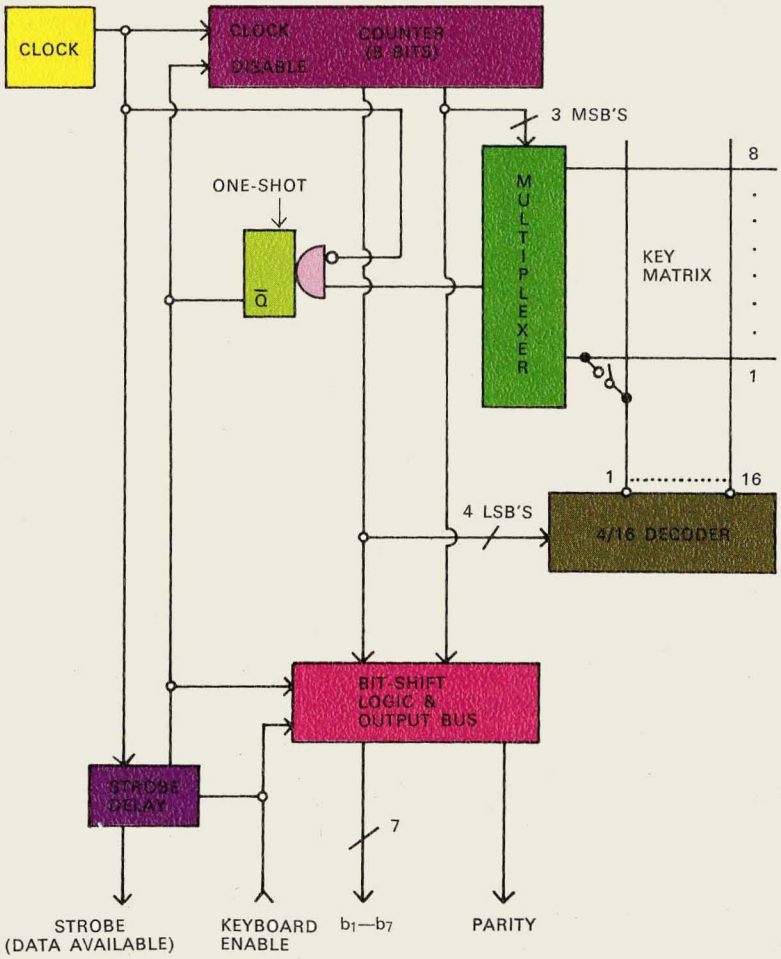
A UNIQUELY SIMPLE DESIGN...

Keyboard Electronics Utilizes Scanning Technique

The keyboard encoder is based on a scanning technique employing an 8 bit counter, a multiplexer and a 4 to 16 line decoder. Encoded keys form a crosspoint matrix with each key connected to the decoder output and the multiplexer input. The decoder is addressed by the 4 least significant bits and the multiplexer by the 3 most significant bits of the counter.

When a key is depressed a matrix connection between the decoder and multiplexer is accomplished. When the counter reaches the appropriate key code, the multiplexer output goes high and a retriggerable one-shot is fired on the trailing edge of the counter clock stopping the counter. The one-shot is continually refreshed until the key is released. The bit-shift logic translates the counter address into an upper case data word if the shift and/or control key is depressed.

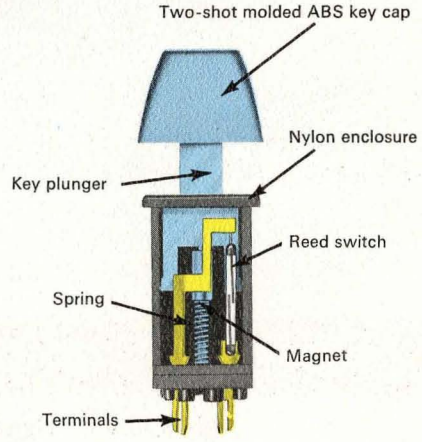




REED SWITCH KEY MODULE

Cherry keyboards are also available with hermetically sealed reed switch key module.

ACTUAL SIZE



Reed switch key module is available with one or two Form A reed switches.

CHERRY®

CHERRY ELECTRICAL PRODUCTS CORP.
3600 Sunset Avenue • Waukegan, Illinois 60085

Makers of patented Leverwheel/Thumbwheel Switches, Matrix Selector Switches, Snap-Action Switches and Keyboards.